FINANCIAL DEEPENING IN SELECTED AFRICAN ECONOMIES

N. S. Malik
Professor
Haryana School of Business
Guru Jambheshwar University of science & Technology, Hisar (Haryana)
e-mail: nsmalik2002@yahoo.com

Ashwani
Assistant Professor
Department of humanities and Social Sciences
National Institute of Technology,
KuruKshetra, Haryana, India
e-mail: ashwani@nitkkr.ac.in

Yonas Teklehaimanot
Research Scholar
Department of Economics
Guru Jambheshwar University of Science & Technology, Hisar (Haryana)
e-mail: yonas1627@gmail.com

ABSTRACT

In modem economic system, the financial system emerged as one of the strongest medium of realizing the economic activities, and the financial deepening provides strength to this medium. The purpose of this paper is to measure the extent of deepened financial system of the selected African economies post reforms period. It also aims to identify the strengthening factors to the financial development of these countries. A dataset of selected African countries comprising South Africa, Nigeria, Mauritius and Kenya, over the period 1990-2017 is utilized in the analysis. Principal component analysis (PCA) was used in this paper to transform the variables representing financial deepening into a combined index. Based on the index values it is found that the sampled countries have viewed a continuous up gradation in the financial deepening except Nigeria. However, from the perspective of individual dimensions of financial system, these economies need to strengthen the financial parameter in balanced manner.

Keywords: Financial sector, economic performance, financial deepening, Principal Component Analysis, African countries.

INTRODUCTION

It has always been a matter of great concern for policymakers to identify the key determinants of economic growth of a country. Various measures such as investment, trade openness, labour productivity, technology, man power, etc are considered to be the key factors for determining the economic growth. In the same line theoretically and empirically literature contended that the financial sector performance is an important peripheral factor along – with primitive inputs for the economic growth. Schumpeter (1912) was among the few who highlighted the explicit role of financial sector in economic development. He described that financial intermediary especially bank facilitates in funding the most successful projects. Bagehot (1973) discussed main variance between England and other developing nations were the mobility of resources by the financial system through its network. It is also held that it is not only the saving rate of a nation that induces economic growth, but the capacity should pool society"s assets also allocating the individuals investment funds at those areas of profitable airstreams. Greenwood and Jovanovich (1990) identified that growth may be inferred starting with capital accumulation increase that is supported over and done with those expanded reserve funds, savings. Kings and Levine (1993) reasoned that financial area shows a key part in acquiring the information about firm and enhance the innovative activities & market specialization, and thus enhances economic growth. The significance of financial liberalization was emphasized in the form of funding the profitable projects by Mckinnon and Shaw (1973) while the financial mediators facilitates in civilizing company authority by economizing on monitoring overheads was discussed by Bencivenga and Smith (1993). Thus, fundamentally the role of financial sector is to process the information and reduces risks and uncertainty associated with investment, and so guides the funds to invest in most productive assets and consequently enhances the economic growth.

The above studies focused on the capital accumulation, screening firms, monitoring firms and corporate governance dimension of financial system. Besides, some of the studies focused on the liquidity risk that impediment the investment in productive assets as investors do not want to relinquish the control of their savings for long period. They prefer to make investment in most liquid assets which are relatively less productive. In viewpoint, financial sector advancement gives liquidity to monetary operators and makes plausibility for contributing in subsidizes over illiquid profitable advantages to influence development (Diamond & Dybvig, 1983).

Greenwood and smith (1996) highlighted the concept of exchange, specialization and innovation. They argued that financial arrangements facilitates transactions by lowering the transaction cost and provides greater specialization, thus affects the economic growth. A vehicle for diversifying risk and effect on growth to shift investment into higher return projects was provided by stock market activities and this was demonstrated by Devereux and Smith (1994). In brief, financial system plays a vibrant role in an economy via mobilizing saving, acquiring the information, monitoring managers & exerting corporate control, reducing risk and facilitating exchange (Levine, 1997).

The above cited studies along with many others suggest that we cannot ignore the role of financial sector while discussing the policies related to the economic growth. In light of observations and reasons given in the existing literature the strengthening and development of financial sector has become key concern for development of a country. It is commonly perceived that as a process, financial system made development in terms of serving the quality, quantity and efficiency of usage rendered by financial institutions. Moreover, financial advancement characterizes as the causes, strategies, and organizations that prompt powerful fiscal intermediation and markets, and also profound furthermore interaction to funds and monetary facilities (World Bank, 2018).

The measures of financial improvement are captured across seven stakes: financial access, financial markets, financial constancy, business environment, institutional environment, banking financial facilities, and non-banking financial services. At first financial deepening was connected with expanding the measures of financing for production and investment through particular and composed businesses. As of late economists characterized, it a more extensive possibility to get to those senses that the expression is interfaced with build in the action for fiscal mediators like saving organizations and business banks in creating economies (Cheng, 1980). Over formed economies, the dynamic support about money related business sectors is also a major significant segment about financial deepening (Fritiz, 1984).

Recently African countries have caught worldwide attention due to sustained growth rate for the last decades, and are becoming to emerge as a new growth pole in the world economy. So far extensive literature has been carried out about the financial deepening of developed countries, and few studies have tried to capture the deepening of financial system of African countries. Moreover, the measurement for African countries have confined to the partial dimension of the financial deepening. This study is an effort to quantify and empirically investigate the financial deepening in selected

African countries. It also identifies the sensitive factors to the financial development so that it will benefit the policymakers to articulate the strategies to advance and strengthen the financial structural design of the regional economies. The study considers the sample of African economies that have relatively better economic environment in the region. These countries include South Africa, Nigeria, Mauritius and Kenya.

Economic Performance of Selected African Countries

The present section highlights main economic essential indicators of economic performance of selected African countries to get an insight about the economic position of sample countries. It utilizes several variables like foreign investment, current account balance, capital formation, saving, and real Gross Domestic Product (GDP) to give a brief overview to the economic performance of the sample countries. The magnitude of economic activities in a nation measured and revealed by the growth amount of GDP. The growth fixed capital formation expresses the rate at which the country would accelerate in the given productive capacity and as well the potentiality of maximum progress of the economy. Moreover, to identify the accessibility of funds "current account balance" is presented along with "foreign direct investment (FDI)". To acquire better perception, study utilized in different periods for sample period from 1970 – 2017, bearing in mind the accessibility of unvarying records and on technical basis different sub-periods were divided. For improved methodological contrast, the sub-periods comprise of five years interval till 2010 and after that with interval of four years. The whole sample period from 1970 – 2017 are also analyzed for the economic essentials. For these countries the performances of several economic indicators were presented on Table 1.

South Africa‟s GDP Growth has showed the growth of more than 4 percent in the year 1970-1974, (Table 1). But the country‟s GDP showed an up and down in percentage until it reached to the average year 1995-1999, and for the consecutive years from 2000-2009 the annual economic growth experienced a constant trend which is around 3.6 percent. After the year 2010, the economy suffered a fall in annual growth and reached to 1.3 percent. The country had a relatively poor performance, particularly towards the end of the decade afterwards 2010. South Africa‟s economic growth had decelerated at the end of the study period and this may be due to the increase in competitiveness in the world market, rising political tension that resulted to affect the countries direct investment to be downgraded to worst situations, which it also dented the investor confidence, and weakened rule of law to have an impact on the country‟s economic growth (Miller, et al., 2018). Gross in fixed capital formation showed ups and downs in the economy but for saving it is high at the beginning of the average years and continued to reach a record low with 16.1 percent. From table 1, Performance of current account balance is negative which depicts the country relied on foreigners for the capital to invest and spend. The country‟s total reserve continues to increases to reach a record high of 15 percent during 2014-2017.

The gross domestic product (GDP) of Nigerian‟s economy estimated to be 375.7 billion $ in 2017 and its share out of the world economy accounts around 0.61 percent (World Bank, 2018). Economic growth has been motivated by agriculture, telecommunication, and services but expansion has yet to support the more than 60 percent of Nigerian‟s. Moreover, the government of Nigerian has made and put a clear direction to implement open market transformations but tangible operations indicate that national administration of limited assets empowers governmental leaders to favor their electorates and communities. The GDP Growth in Nigeria reached record high of 12 percent (Table 1) in the time period of 1970-1974 and this is because of oil price shocks in the mentioned average year resulted in a large transfer of wealth to the country (Barian, 1987). Low worldwide oil rates have disrupted the petroleum-based economy and showed low percentage negative 3.4 percent in 1980-1984 (Table 1). Low global oil prices might have affected the petroleum-based economy during this period (Ben, 1991). The GDP Growth fluctuated substantially during the past indicated years. It tended to decrease through 2000-2017 period ending with 2 percent average. The reason behind for this recent weakest growth rate is explained that oil production decreased but the non-oil part persistent to increase (Chukwuogor, 2018).

Mauritius, in recent years, despite the remoteness from world markets, small gift of natural assets and lesser economic size, the country restructured its economy from agrarian sugar dependent economy to the most prominent and advantageous trade led strategy (Tandrayen & Kasseeah, 2018). GDP grow averaged more than 4 percent between 1970 and 2017 (Table 1). Mauritius boasted rapid growth between 1985‟s - 1995‟s, the period marked as an African version of the East Asian miracle economy. This hastening of the growth speed of economic success in the 1980‟s is the outcome of good macroeconomic policies, particularly fascial prudence, with enhancements in scores for the regime integrity and a competitive exchange rate policy. Moreover, solid community zone plus private area organizations through extraordinarily productive contact among the two contributed to high growth (Zafar, 2011). However, the Mauritius economy after 2009 faced a significant growth slowdown. Besides, as Mauritius experienced steady growth following the reforms, the country practiced low inflation and increased employment. The achievement of government‟s hard work at economic broadening had been seen for the organizational transformation away from agriculture and into service and manufacturing. Additionally, wind falls from textile and sugar inclination have been also used prudently to help encourage broadening various sectors and increase development (Ibid).

Kenya is the economic, financial, and transport pivot of East Africa, and its actual GDP Growth has been calmed in latest periods. Kenya‟s economy appreciated the highest Growth rate with 8.9 percent during 1970-1974 after that lowest growth rate was recorded on time period of 1900-1994. Because of High volatility of economic activities, political shocks, exogenous blows like famine, oil rates, international disaster and macroeconomic plan barriers comparatively extraordinary price rises made the economy to suffer with severe drop in 1990-1994 and its GDP growth reached at lowest level of 1.6 percent (Table 2). During this period the economy suffered because of high volatility of economic activities, political shocks, drought, high inflation, and high unemployment; outside shocks like global oil price increase contributed noticeably for the shock of the economy (Price et al., 2018). On the other hand the economy progressed to a track of rapid growth after 2004, GDP growth increased steadily from 2.6 percent in 2004 to 4.6 percent in 2009 and then in 2013 to 6.2 percent (Table 2). In the same time period a promising macroeconomic environment like, extended private credit, steady exchange rate, low inflation, more trustworthy supply as well as lesser charges and power source boasted industrial production in the country. Agricultural production registered vigorous advancement, moved by increased livestock output, as a result of improved pasture, extended credit to the sector; and bigger use of high-quality of inputs. And also at National and subnational level both government consumption and private consumption enlarged and rose as a result of increased credit. Immense road and energy projects of public investment, also urged growth (World Bank, 2014). After 2013 the economy showed a moderate decline in GDP growth and has almost calmed then, even though at the rates lower than before 2014.

In general, these selected African countries exhibited volatile and fluctuated GDP growth ratio over the interval phase of the study. Among these countries South Africa, Nigeria, and Kenya started their growth journey with high growth compared to others. In contrast, Mauritius started at the early stage with lower GDP growth (figure 1). Though, the economic size of South Africa and Nigeria is large and big, and there were times these countries had faced economic slowdown (i.e. South Africa 1990-1994 and for Nigeria from 1980-84 (Table 1). In the period 2005- 2009, all selected countries growth had enjoyed the good economic progress but these increments of GDP growth has only continued and maintained with progressive growth pattern for the country of Kenya in the period of 2010-2013.

OBJECTIVES OF THE STUDY

The research objectives are indicated in the following manner:

1. To measure the financial deepening of the selected African economies.
2. To identify the sensitive factors to the financial development so as to take care for devising strategies to advance and strengthen the financial system of the region economies.

The study hypothesizes that the financial system might have deepened in select African countries in the post reforms period, and the institutional environment would have gained higher weightage in making the financial system more deepened.

METHODOLOGY

Variables Selection

As per existing literature, financial system performance is mainly measured through both dimensions- institutional based mainly driven by banks and market-oriented mainly captured through stock markets. Other dimensions such as non-banking financial companies and bonds market also shape the financial system, but their roles are somehow reflected in broader categories of intuitional as well as market based environment. The present paper similarly measures the financial development of the selected countries by seeing the various scopes of both the environments in light of specified literature. The rational and measurement of financial development indicators are discussed as follows:

Liquid liabilities "(currency plus demand and interest bearing liabilities of banks and non-bank financial intermediaries) as percentage of GDP (LL)" was utilized to measure financial institutions size. Among the financial development indicators BANK expressed as "Deposit banks domestic credit as percentage of total assets (central as well as deposit money banks)" was applied to know the functioning of financial system (King and Levine; 1993). Those data looking into this variable could be used to recognize the beneficial part of commercial banks clinched alongside a connection to the national bank. Moreover, it is feasible to recognize the allotment of the credit delivered by the banks in the sense that if those credit will be setting off under those control of private sector or else general public sector. It is essential to figure out the determining factor of investment that nurtures profitable change. PRIVATE variable is used that equals "the ratio of credit allocated to private enterprises to total domestic (excluding credit to banks)" to know the allocation of savings. Finally, PRIVY is equal to "credit provided to private enterprises divided by nominal Gross Domestic Product (GDP)" which it measures the extent of domestic credit delivered to the private sector was utilized (King & Levine, 1993). Those supposition on PRIVY and PRIVATE measures will be that financial system that dispense a lot of credit with private sector are further involved in seeking firms, applying company control, giving risk administration services, mobilizing investment funds and enabling exchange than financial systems merely pipe credit to the government (Levine, 1997). Activity of financial institutions measured by of financial intermediaries "Bank credit to private sector as percentage of GDP" was taken into account (Beck et al, 1999). Financial institution and financial markets function together in financial system using the indicators specified above. As one of the roles of indicators market capitalization as share of GDP measures market size, and defined as "value of domestic equities traded on domestic exchanges to GDP" (Levine & Zervos, 1998). "Value of domestic equities traded on domestic exchange to the GDP income" which is stock traded value ratio (STVR) measures market activity (Kunt & Levine, 1999). Stock traded value ratio commonly used to gauge market liquidity because it measures trading relative to economic movement and also measures the worth from claiming stock transaction done connection to those extents of the economy. Turnover ratio (TR) is used to measure the efficiency of stock market, and is equal to "value of trades of domestic equities on domestic exchange as a share of the value of domestic equity or market capitalization". In general, this paper utilizes LL, BANK, BCRDT, Market capitalization, STVR, PRIVATE, TR and PRIVY as percentage of GDP for measuring financial deepening.

Data Sources

Secondary data was applied on different indicators in the study which is collected from international sources, the World Bank and International Monetary Fund publications. The reliable data records are presented from 1990 ahead for the selected countries for different dimensions of financial development. Financial deepening index indicators of financial development are obtainable from 1990 – 2017 sample periods. To have greater perception and comparability, the sample period divided from 1990 – 1994, 1995 – 1999, 2000 – 2004, 2005 – 2009, 2010 – 2013 and 2014 – 2017 sub – periods on procedural basis of grouping.

Method of Analysis

The data so collected was analyzed through the application of statistical technique, Principal Component Analysis (PCA) and converted the individual dimension of financial indictors into a composite index. The detailed process for index compilation is given as below:

Financial Deepening Weighted Index

Primary requisite for the selected institutional and market indicators must be standardized.

$$Z_{it} = (X_{it} – E(X_i))/SDX_i \quad (1)$$

Where X_{it} = base series, SDX_i = Standard deviation of X_i, $E(X_i)$ = mean of X_{it}, Principal component which are linear combination of the X‟s of a set of new variables (P_i) was built by the technique of principal component.

$$P_i = \sum^{n}_{k=1} a_{ik} X_k \tag{2}$$

Principal components hold the two circumstances hence a‟s named leadings are selected.

i) Uncorrelated principal components.

ii) The maximum variation of the total variation in the set of all X‟s absorbed by the first principal component (p_1). The maximum variance of the remaining variation in X‟s was absorbed by the second principal component.

The factor loadings were estimated by the following steps (Koutsoyiannis, 1997)

i) Correlation matrix defined as "Simple correlation coefficients among the K explanatory variables" are resulted and tabulated in table form.

ii) The correlation matrix of every row (or column) is added.

iii) Rows (or columns) sums are computed totally.

iv) Dividing each column sum by the square root of the grant total of the correlation coefficients was used for obtaining the loadings, aij‟s for the first principal component P_1.

v) The latent root or Eigen Value "which is the sum of the square of the loadings of each principal component" is expressed as:

$$\lambda_1 = \sum^{n}_{k=1} L_i^2 \tag{3}$$

vi) All the principal components of the sum of the latent roots is equal to the numbers of X‟s; $\sum^{n}_{k=1} \lambda_i = n$ (4)

vii) The contribution of each principal components are obtained using

$$V_1 = \lambda_i / \sum^{k}_{i=1} \lambda_i \tag{5}$$

viii) More than 80 percent of communality variations which can be explainable by those principal components are selected.

The method of business activity index which is developed by George (1980) was used for the computed score of PCA for financial development to transform its mean value of 100 after establishing the number of principal components. And also, to compute the financial deepening weight for selected economies similar approach was followed by Fritiz (1984).

The index value is assumed to be zero activity and 100 at mean activity (see George, p. 29). With the data standardized the index value is presumed to be 0 at 6σ and 100 at mean activity. Two simultaneous equations in two unknowns‟, C (a scalar to normalize the index) and B (the correlation between two detected variables sharing one common factor) must be solved to drive the overall index. Accordingly at mean:

$$F_{t\,(average)} = \sum^{n}_{i=1} = f_i (Z_i + b) \tag{6}$$

Where; Value of index;

$F_{t(min)} = 0$, $b = 6$ for minimum;

$$= \sum^{n}_{i=1} C\lambda_i (Z_i + 6) = 100 \ (7)$$

The index coefficients g_i , which is the weight of each variable in constructing the index is as follows:

$$g_i = 100\lambda_i / (6\sum\lambda_i) \tag{8}$$

The complete index is

$$G_i = \sum^{n}_{i=1} g_i (Z_i + 6) \tag{9}$$

Though, K factors are essential to attain 90 percent description of the communality in the index of financial deepening. Eigenvalues (ω‟s) were used to measure the respective variables which are indexed based on their comparative contributions. Combined score is obtained as when k = 2:

$$GI_{ij} = \sum^{n}_{i=1} g_i^1 (Z_i + 6) \frac{\omega 1}{\omega 1 + \omega 2} + \sum^{n}_{i=1} g_i^2 (Z_i + 6) \frac{\omega 2}{\omega 1 + \omega 2} \tag{10}$$

GI_{ij} would give the index values ranging from 0 to 100, suggesting for poor and deepened financial system, respectively.

FINANCIAL DEEPENING IN SELECTED AFRICAN COUNTRIES

The results of financial deepening for individual countries are presented in the following paras:

South Africa

As it is reflected in financial development indicators South Africa economy had broadly relied on financial market rather than intuitional environment. As shown from Table 2 market capitalization and stock traded value ratio, market size and activity was very large enough.

Table 2: Financial Development Indicators for Selected African Countries (Average Values)

Year	LL[1]	BANK	Bank Credit[1]	PRIVATE	PRIVY[1]	STVR[1]	TR	MC[1]
South Africa								
1990-1994	49.52	67.70	53.93	56.95	98.47	6.90	4.72	147.35
1995-1999	52.26	46.02	62.40	39.39	118.46	29.72	19.06	161.06
2000-2004	58.10	28.94	64.22	22.33	124.52	37.31	24.49	154.08
2005-2009	75.54	31.64	73.82	25.63	148.31	67.41	29.00	237.75
2010-2013	73.6	29.14	68.46	23.63	146.07	62.15	27.05	230.45
2014-2017	72.27	16.09	66.90	13.25	127.15	99.25	30.55	292.93
1990-1999	50.89	56.86	58.17	48.17	108.46	18.31	11.89	154.20
2000-2009	66.82	30.29	69.02	23.98	136.42	52.36	26.74	195.92
2010-2017	72.93	22.61	67.68	18.44	136.61	80.70	28.80	261.69
1990-2004	53.29	47.56	60.18	39.56	113.82	24.64	16.09	154.16
2005-2017	73.80	25.62	69.73	20.84	140.51	76.27	28.87	253.71
1990-2017	63.55	36.59	64.95	30.20	127.17	50.46	22.48	203.94
Nigeria								
1990-1994	24.74	5.728	11.63	2.32	11.78	0.22	1.46	15.02
1995-1999	16.73	1.22	11.23	0.82	11.25	0.96	3.45	27.82
2000-2004	21.78	0.85	13.75	0.77	13.78	1.15	5.78	11.04
2005-2009	29.17	0.77	24.59	1.21	24.76	5.07	16.59	27.10
2010-2013	21.27	0.65	13.06	0.40	13.07	1.11	10.01	12.76
2014-2017	19.90	0.47	14.62	0.29	14.65	0.68	6.90	9.67
1990-1999	20.74	3.48	11.43	1.57	11.52	0.59	2.45	21.42
2000-2009	25.48	0.81	19.17	0.99	19.27	3.11	11.78	19.07
2010-2017	20.59	0.56	13.84	0.35	13.86	0.89	8.45	11.21
1990-2004	21.09	2.60	12.20	1.30	12.27	0.78	2.45	17.96
2005-2017	23.45	0.63	17.42	0.64	17.49	2.28	11.16	16.51
1990-2017	22.27	1.61	14.81	0.97	14.88	1.53	6.81	17.23
Mauritius								
1990-1994	68.75	6.16	38.48	4.42	38.48	1.66	5.76	28.13
1995-1999	77.19	4.84	50.61	3.48	50.61	2.08	5.78	35.87
2000-2004	88.06	3.56	64.02	2.74	64.04	1.70	6.29	28.12
2005-2009	96.37	3.27	75.45	2.47	75.52	3.35	5.40	64.70
2010-2013	97.72	3.33	94.90	2.90	94.95	3.32	4.73	70.22
2014-2017	107.90	3.21	99.85	2.53	99.88	3.39	5.16	66.29
1990-1999	72.97	5.50	44.55	3.95	44.55	1.87	5.77	32.00
2000-2009	92.21	3.42	69.73	2.61	69.78	2.53	5.85	46.41
2010-2017	102.80	3.27	97.37	2.71	97.42	3.35	4.94	68.25
1990-2004	78.00	4.85	51.04	3.55	51.05	1.84	5.95	30.71
2005-2017	100.70	3.27	90.07	2.63	90.12	3.35	5.10	67.07
1990-2017	89.33	4.06	70.55	3.09	70.58	2.60	5.53	48.89
Kenya								
1990-1994	34.43	2.92	19.82	1.63	19.82	0.53	1.69	28.74
1995-1999	37.60	1.69	24.32	1.10	24.48	0.58	4.06	16..04
2000-2004	37.38	1.29	25.70	0.88	25.86	0.80	4.29	16.21
2005-2009	36.43	1.39	24.41	1.00	24.52	2.82	7.40	35.95
2010-2013	41.10	1.18	29.68	0.84	29.77	2.36	7.46	29.50
2014-2017	40.74	1.03	32.96	0.78	33.01	1.24	7.80	28.34
1990-1999	36.02	2.31	22.07	1.36	22.15	0.55	2.84	22.39
2000-2009	36.91	1.34	25.06	0.94	25.19	1.81	5.84	26.08
2010-2017	40.92	1.11	31.32	0.81	31.39	1.80	7.63	28.92
1990-2004	36.47	1.97	23.28	1.20	23.38	0.64	3.32	20.33
2005-2017	39.42	1.21	29.01	0.87	29.10	2.14	7.55	31.26
1990-2017	37.95	1.58	26.15	1.04	26.24	1.39	5.44	25.80

Source: WB and IMF 2017, 1 Percentage of GDP, LL: Liquid Liabilities, PRIVY: Credit to private enterprises, STVR: Stock Traded Value Ratio, MC: Market Capitalization,PRIVATE: Credit to private sector as percentage of total credit, Bank Credit: Credit Generated by Banks to private sector, BANK: Commercial banks credit as percentage of Total Credit, TR: Stock traded turnover ratio of domestic shares, - data unavailable.

Financial market size showed an increase from 150 percent of GDP in the period of 1990 – 1994 to massive 290 percent during 2014 – 2017 and continued to perform throughout these periods (Table 2). The rising trend of Market Capitalization was due to the purchase of high volume of shares in the competitive market values (Muchaonyerwa & Choga, 2015). Moreover as it indicated by Loubser, 2010 despite global market crisis in the year 2008, the time period registered an increase because of the measures and strategy initiatives done by the African board. Whereas the activity of market which is indicated by stock traded value ratio (STVR) increased significantly from 6.9 percent in 1990 – 1994 to 99.25 percent during 2014 – 2017. However, the financial markets efficiency performed slow as indicated during the study period towards looking turnover ratio but on the other hand the market efficiency showed significant values with market capitalization. The involvement of commercial banks in the credit creation process as reflected in their assets proportionate of total banking assets, which ranging between 50 to 70 percent for the sample period. The result also suggest that the role of commercial banks has increased over the period of time and also domestic credit to private sector and credit provided by banking sector has continuously increased (Table 2).

Table 3: Combined score of Individual Financial Variables for Selected African Countries

Country/Factor	LL[1]	BANK	Bank Credit[1]	PRIVATE	PRIVY[1]	STVR[1]	TR	MC[1]	Eigen Values (EV)	EV proportion	Proportion of Communality
South Africa											
Factor 1	0.42	-0.06	0.42	0.42	0.42	-0.36	-0.06	0.42	5.32	70.59	0.67
Factor 2	0.12	0.66	0.12	0.12	0.12	0.27	0.66	0.12	2.22	29.41	0.28
Combined Weight	3.46	1.12	3.46	3.46	3.46	-2.10	1.12	3.46	7.54	100.00	0.95
Nigeria											
Factor 1	0.38	-0.20	0.46	-0.14	0.46	0.40	0.43	0.16	4.21	57.05	0.53
Factor 2	0.22	0.66	0.06	0.69	0.07	0.14	0.02	0.13	1.84	24.93	0.23
Factor 3	-0.42	-0.10	-0.20	0.04	-0.20	0.40	0.11	0.75	1.33	18.02	0.17
Combined Weight	-1.00	-0.38	0.79	1.08	0.81	5.4	3.01	6.98	7.38	100.00	0.93
Mauritius											
Factor 1	0.4	-0.38	0.41	-0.37	0.41	0.31	-0.11	0.35	5.59	74.14	0.7
Factor 2	-0.04	-0.12	-0.05	-0.12	-0.05	0.36	0.9	-0.12	1.12	14.85	0.14
Factor 3	-0.17	0..34	-0.05	0.41	-0.05	0.61	-0.09	0.55	0.83	11.01	0.1
Combined Weight	4.45	-4.48	4.72	-4.25	4.72	5.86	1.49	4.67	7.54	100.00	0.94
Kenya											
Factor 1	0.38	-0.4	0.41	-0.4	0.41	0.24	0.37	0.1	4.65	64.32	0.58
Factor 2	-0.15	0.16	-0.17	0.18	-0.17	0.59	0.35	0.62	1.86	25.73	0.23
Factor 3	0.17	0.52	0.45	0.52	0.44	-0.15	0.01	0.14	0.72	9.95	0.09
Combined Weight	3.35	-2.97	3.8	-2.9	3.79	3.99	4.65	2.96	7.23	100.00	0.90

Source: Authors" Computation, 1 Percentage of GDP

To understand and assess the cumulative observation of different magnitudes of the financial development, the PCA is utilized to change them into single combined weight. The results in table 3 and 4 show that two factors derived from eight variables explain 95 percent behavior of the financial development in South Africa. These factors are further summarized into single construct using the above discussed method. In the combined score, variables LL (Broad Money), Bank Credit, PRIVATE, PRIVY, and MC hold the highest score (Table 3). The composite index has attained the value of 80.36 in

1990 and it continued to reach the value of 117.83 in 2015 (Table 4).

Table 4: Financial Deepening Index for Selected African Countries

Year	South Africa	Nigeria	Mauritius	Kenya
1990	80.36	92.85	49.7	50.12
1991	85.08	91.75	54.69	57.8
1992	82.35	92.4	58.52	73.25
1993	77.49	88.99	60.64	72.72
1994	73.22	91.72	75.16	88.69
1995	77.49	99.96	67.05	95.23
1996	81.33	108.81	74.33	81.47
1997	85.63	110.15	90.21	91.59
1998	90.9	109.95	90.75	85.19
1999	93.15	88.25	88.33	92.14
2000	85.08	99.04	85.62	86.86
2001	96.51	92.69	99.41	87.38
2002	91.8	86.29	88.94	90.83
2003	93.61	96.55	104.66	102.71
2004	97.94	102.38	106.16	111.12
2005	104.64	102.87	113.63	115.48
2006	119.46	108.29	114.47	122.83
2007	128.53	151.4	138.98	110.94
2008	130.1	133.2	122.88	104.25
2009	125.43	108.22	129.15	92.35
2010	121.5	97.66	130.68	113.93
2011	119.05	92.73	133.98	123.68
2012	117.34	94.14	124.72	120.25
2013	114.43	95.57	131.25	130.26
2014	114.19	93.6	135.48	129.59
2015	117.83	92.92	143.76	128.38
2016	116.19	88.63	129.42	121.84
2017	115.38	90.91	143.65	119.69
Average Financial Deepening Index				
1990-1994	79.7	91.54	59.74	68.52
1995-1999	85.7	103.42	82.13	89.12
2000-2004	92.99	95.39	96.96	95.78
2005-2009	121.63	120.8	123.82	109.17
2010-2013	118.08	95.53	130.16	122.03
2014-2017	115.9	91.52	138.08	124.88
1990-1999	82.7	97.48	70.94	78.82
2000-2009	107.31	108.09	110.39	102.47
2010-2017	116.99	93.52	134.12	123.45
1990-2004	86.13	96.79	79.61	84.47
2005-2017	118.54	102.61	130.69	118.69
1990-2017	100.00	100.00	100.00	100.00

Source: Authors‟ Computation

In spite of the ups and down incidence in global economy the overall index showed an increasing trend. After 2005, the index was measured for higher values than its mean (100). The rising trend during 2005 – 2009 was may be due to the structural transformation that was implemented in the country like introducing new sectors of economy from the given year 2000 to 2005 (SFI, 2009). As it is observed the composite indicator was in rising position in 2007 but after the global recession in 2008 which is due to the crash of the housing market of the United States of America (USA) it showed a decrease (SSA, 2010). Generally the FDI showed above average level especially after the year 2005 and reflect the positive sign of development in financial system of the country‟s economy throughout the study period.

Nigeria

In Nigeria, it is evidenced that financial system was dominated by financial markets rather than institutions. The liquidity and size of financial institution had been very small and showed a fluctuation which, these phenomena lasted till 2017. The financial institution average size has improved from 24.74 through 1990 – 1994 to 29.17 for two decades (2005 – 2009) and declined to become 19.9 during 2014 – 2017. The average size of the financial institution has decreased during 1995 – 1999 because of an effect of Asian financial crisis these were sharp fall in world oil prices which had had a negative net impact on the country‟s economy (Hussain et al., 1999). As it is depicted from table 2 it is worth to say that commercial banks mainly contributed and provided credit to private sector. Moreover, in later year‟s percentage of total credit which is credit to private sector showed a significant decrease, indicating that other sector with credit is intensifying, and this made for the active working of the financial system to be apprehended (Table 2). Thus, the size and activity of financial institution in Nigeria are at infant stage when it compared to other more developed financial institutions.

Three factors that explain around 93 percent variance of communality were considered while computing the overall index. The overall combined score was relatively less throughout the study period for financial institution but for financial markets it depicted 5.4 for STVR, 3.01 for TR and 6.98 for MC (Table 3). The financial development index was 92.85 in 1990 and showed a fluctuation to reach 90.91 in the year 2017 (Table 4). The reforms that was made on the countries financial structure contributed to the financial sector of the Nigerians economy to encourage competition and strengthen the supervisory role of the authorities to streamline the association between the public and financial sectors of the economy (CBN, 2006). In line with this because of the reforms made on 2005 – Bank consolidation and 2006 – Liberalization of the utilization and disbursement of export proceeds by exporters led the value of FDI to register peak values during these years (Omankhan, 2012 and Table 12). The financial deepening appreciated by Nigerians financial system expresses of well support financial market based system. However the index has weakened in 2017, that may be the result of miss- management and lack of good governance which these leads to say that Nigeria‟s financial system was relatively on progress during the study period.

Mauritius

Mauritius is the country where there is a comparatively developed bank system as well as capital market but as it is known in small countries, the security markets are shallow (IMF, 2008). Because the country put measures like liberalizing the financial sector in the period of 1986 to 1994, the sector began to turn potential into reality (Muyambiri & Odhiambo, 2016). Liquid liability ratio which showed depth of the financial system appears to be performed widely (Table 2). Mauritius financial market specific to size and activity showed an increasing trend throughout the study period. However efficiency exhibited a fluctuation for this period (Table 2). As indicated from the table 2 market capitalization as a share of GDP and Broad Money, which measures the size of the financial market showed a substantial increment from 28.13 during the year 1990 – 1994 to 70.22 in the average year of 2010 – 2013. It can be inferred from Table 2 that banks were playing major part than markets during the study periods. Mauritius financial market had recorded moderate performance in the efficiency as the turnover ratio more or less consistent during the study period with 5 to 6 percent average. Overall the country financial market even if it had some fluctuation it showed better performance during last decades.

To calculate the total financial deepening index three factors are utilized. Variance of communality was explained by these factors by more than 94 percent and the variables holding vital weights are (LL) Broad Money 4.45, Bank Credit 4.72, PRIVY 4.72, Stock traded value ratio (STVR) 5.86 and Market capitalization (MC) 4.67 (Table 3). As indicated in table 4 the total financial development index depicted lower values at the beginning of the study periods 1990‟s as the indicated index value registered less than 50. With the rapid and continue increment together with the activeness of the market, the mean value of index crossed (100) in the year 2003 and reached its maximum level of 143.76 in 2015 (Table 4). The shape of financial deepening specifies that it is further concerned with to financial markets performance as the positive flow in markets lifts the index rate. It could be claimed that increasing the size of financial intermediaries might additionally toughen the total progress of financial system. Thus, Mauritius financial market as indicated by the variables was performing better when it is compared to other relative selected countries. The success in Mauritius financial development comes from the country‟s well organized and controlled management system as well as ensuring stable and maintained macroeconomic environments (Muyambiri & Odhiambo, 2016).

Kenya

In light of the given parameters of financial development, it has been found that Kenya‟s financial system was small in terms of size in the study period. The liquidity of the market was very low in terms of stock traded value ratio that was less than 1 percent of GDP until the period of 2004 (Table 2). As it can be inferred from the data the size, efficiency and liquidity having lower values, the financial market was not much efficient and are still at lower side during this period. Over the years in this country a different reforms were launched in order to upgrade the capital market. As it mentioned in the study of Nyasha & Odhiambo, 2014, different reforms like CMA, call over trading system, open Outcry System, and measures taken on exchange control system contributed for the Kenyan‟s capital market to be improved noticeably (Ibid). Thus, generally Kenya‟s capital market has been described as narrow and shallow. Moreover, during the study period institutional environment appeared to be the key contributor to satisfy the financing needs of business houses. Credit allocated to the private sector enjoyed some improvement and it showed an average increment from 19.82 in 1990 – 1994 to 33.01 in 2014 – 2017 (Table 2).

To measure the financial deepening, three factors are identified based on Eigen Value criteria explaining 90 percent variance of the communality. Among these factors, financial market-based variables are getting relatively more weights than the institutional-based variables (Table 3). Since 2003 the economy has sustained better financial development and the index value reached 130.26 in 2013 highest for the sample period (Table 4). Dramatic shifts in Kenya‟s financial landscape during the mentioned year were mainly driven by the advent of mobile money & higher use of transaction services (CBK, 2009). Due to world financial crisis (Ibid) FDI slowed down and again rises up above average level towards the end of the study period. In 2017 a decline is observed in the index value and might be caused by adverse impact of global ups and down economy. The index value is relatively more weighted by market-based system and hence active policies related to the development of financial markets may enhance the overall financial development of the economy.

CONCLUSION

It has been found that financial institutions occupied the major role in financial system during the early 1990s for selected African countries. The experiences of developed countries presented the facts that when an economy moves towards improved economic growth, the financial markets begin to play relatively active role in the financial system. These findings are tuned to the given research hypothesis of the study framed as per the experiences of developed countries. Moreover, due to background of centralized system, the allocation role of financial system still need to be enhanced as less resources are mobilized towards private sector. The financial systems of all the sample economies are smaller in depth. Some of the economies of selected countries Nigeria and Kenya have least role of financial markets in the system. Based on combined score of different indicators of financial development, it could be observed that the overall financial development in South Africa and Mauritius were enhanced by market-based indicators. At aggregate level, all the sample economies have viewed a continuous flow in financial deepening index since 2005 except Nigeria. It further indicates that the financial systems of these economies may see better growth and development in future.

REFERENCE

A.Koutsoyiannis (1997). Theory of Econometrics. The Macmillan press Limited, London.

Bagehot, W. (1973). *Lombard Street*. Homewood, Il: Richard D. Irwin

Barian P., (1987). Nigeria during and after the oil Boom: A Policy Comparison with Indonesia. The World Bank Economic Review, Vol. 1, No. 3 (May, 1987), pp. 419-445

Beck, T., Levine, R. & Kunt, D. A. (1999). A new database on financial development and structure. (Policy Research Working Paper 2146). World Bank.

Bencivenga, V. R, & Smith, B. D. (1993). Some consequences of credit rationing in an endogenous growth model. *Journal of Economic Dynamics and Control*, 17 (1-2), 97-122.

Cenral Bank of Nigeria. (2006). Annual Report and Statement of Accounts. December, 31st. Central Bank of Nigeria.

Central Bank of Kenya. 2009. Financial Inclusion in Kenya. Survey results & analysis from Fin Access 2009.

Cheng, Hang – Sheng (1980). Financial deepening in pacific Basin countries. *San Francisco Federal Reserve Bulletin,* 43 – 56.

Chukwuogor, chiku & Ndu, Ikechukwu & Birkbeck,. (2018). Review of the Nigerian Economy 2003 to 2017/18: Prospectsfor increased sustainable Economic Development.

Devereux, M. B. & Smith, G, W. (1994). International risk sharing and economic growth. *International Economic Review*, 35(4), 535-550.

Diamond, Douglas W. and Dybvig, Philip H. (1993). Bank runs, deposit insurance, and liquidity. *Journal of political Economy*, 21(3), 401 – 419.

Fritz, R.G. (1984). Times series evidence on the causal relationship between financial deepening and economic development.

Journal of Economic Development, 9, 91 – 111.

George, Edward Y. (1980). New economic indicators for EJ paso. South West. Business and Economic Review, 18(2), 1 – 44.

Green w, Jeremy, & Jovanovic, Boyan. (1990). *Financial Development, growth, and the distribution of income:* National Bureau of Economic Research.

Green Wood, J. & Smith, B. (1996). Financial Markets in development and the development of financial markets. *Journal of Economic Dynamics and control*, 21(1), 145-181

Hussain, M.N., Mlambo K., & Oshikoya T., (1999). Global Financial Crisis: An African perspective. African Development Bank.

International Monetary Fund. (2008). Mauritius: Financial System Stability Assessment – Update.

King, R. G. & Levine, R. (1993a). Finance and growth: Schumpeter might be right. *The quarterly journal of economics,* 108(3), 717-737.

King, R. G. & Levine, R. (1993b). Finance, entrepreneurship & growth. *Journal of Monetary economics*, 32(3), 513-542.

Kunt, A.D. and Levine, R. (1999). Bank – Based and Market – Based financial system: Cross country comparison. Policy Research Working Paper 2143, World Bank.

Levine, R and Zervos, S. (1998). Stock markets, Banks and Economic Growth. American Economic Review, 88 (3) 537 – 558.

Levine, R. (1997). Financial Development and Economic Growth: Views and Agenda. *Journal of Economic Literature*, 35(2), 688-726.

Loubser, R. , (2010). "JSE Limited Results resilient despite tough trading conditions". Available online at http://www.jse.co.za.

McKinnon, R.I. (1973). *Money and Capital in Economic Development*. Washington, DC: The Brookings Institution.

Miller.T, Kim.A.B, &Roberts.J.M. (2018). Economic Freedom: The Heritage Foundation, Washington, DC, United States of America.

Mmankhanlen A. E. (2012). The Financial sector Reforms and their effect on the Nigerian Economy. Covenant University, Ota, Ogum State, Nigeria.

Muyambiri, B. & Odhiambo. N.M. (2016). The sequencing of Financial Reforms and Bank-Based Financial Development in Mauritius. Journal of Accounting and Management. Scientific Review.

Nyasha, S. & Odhiambo. N.M. (2014). The Dynamics of Stock Market Development in Kenya: Journal of Applied Business Research.

Price M., Simon O., and David S., (2018). Kenya Country Report. Navarra Center for International Development. Institute For Culture And Society: University of Navarra

Schumpeter, J.A. (1912). *The theory of Economic Development: An Inquiry into profits, Capital, Credit, Interest, and the Business cycle*. Cambridge: Harvard University Press.

Shaw, E.S. (1973). *Financial Deepening in Economic Development*. New York: Oxford University press.

South Africa info, (2009), "Sectors of the Economy", Available (online) at hhtp://www.South Africa. Info/business/economy/sectors.

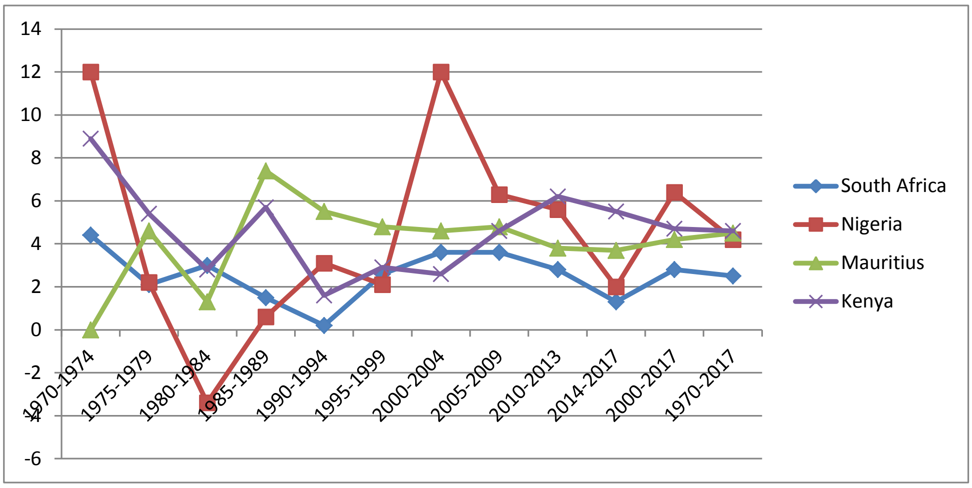
Statistics South Africa. (2010). "Various articles on employment, Wholesale and Retail Sales". Avaialable online at http://www.statssa.gov.za

Tandrayen-Ragoobur, Verena & Kasseeah, H.. (2018). Mauritius" economic success uncovered.

World Bank. 2018. Ethiopia Economic Update. The Inescapable manufacturing – service Nexus:

Zafar, Ali. (2011).Mauritius economy success story. World Bank group Africa Success Stories project, Africa Region.

APPENDIX



Source: WB Data Base 201

Figure 1: GDP Growth Rates of Selected African Countries

Table 1: Economic Performance of Selected African Countries (Average Values)

Year	GDP Growth*	GFCF[1]	GDS[1]	CAB[1]	FDI[1]	TR[1]
South Africa						
1970-1974	4.4	28.55	27.47	-4	1.1	7.4
1975-1979	2.1	29.3	26.54	-0.7	-0.2	6.8
1980-1984	3	28.94	26.06	-1.7	0.2	5.3
1985-1989	1.5	20.97	20.64	2.9	-0.2	2.5
1990-1994	0.2	17.62	16.15	1.2	0.1	2.3
1995-1999	2.6	17.99	15.41	-1.3	1.1	3.6
2000-2004	3.6	16.79	16.29	-0.5	1.7	6
2005-2009	3.6	20.67	16.89	-4.3	2.2	11
2010-2013	2.8	20.09	16.5	-3.7	1.3	12
2014-2017	1.3	19.86	16.1	-3.7	0.8	15
2000-2017	2.8	19.35	16.45	-3	1.5	11
1970-2017	2.5	22.08	19.81	-1.6	0.8	7.2
Nigeria						
1970-1974	12	-	-	-	2.1	7.95
1975-1979	2.2	-	-	-3	1	13
1980-1984	-3.4	19.61	17.71	-6	0.5	7.31
1985-1989	0.6	12.26	18.19	2.6	2.9	6.34
1990-1994	3.1	13.17	17.81	2.3	5.4	10.8
1995-1999	2.1	7.678	8.746	-0	3.7	15.7
2000-2004	12	7.792	12.52	9.5	2.7	17.9
2005-2009	6.3	8.684	23.03	19	4.1	27.7
2010-2013	5.6	15.83	25.99	3.4	1.6	9.46
2014-2017	2	15.54	18.41	0.1	0.9	7.97
2000-2017	6.4	11.96	19.99	8.1	2.3	15.8
1970-2017	4.2	12.57	17.8	3.1	2.5	12.4

Year	GDP Growth*	GFCF[1]	GDS[1]	CAB[1]	FDI[1]	TR[1]
Mauritius						
1970-1974	-	-	-	-	-	-
1975-1979	4.6	30.55	21.51	-9.5	0.3	7.52
1980-1984	1.3	20.64	14.35	-6.7	0.2	5.14
1985-1989	7.4	26.51	26.9	-0	1	15.9
1990-1994	5.5	29.96	27.09	-2.9	0.7	26.5
1995-1999	4.8	26.44	25.94	-1	0.8	18.2
2000-2004	4.6	23.39	25.93	2.1	1.4	23.8
2005-2009	4.8	24.64	19.36	-7.2	2.6	21.3
2010-2013	3.8	24.37	13.75	-9.2	3.9	26.3
2014-2017	3.7	18.14	8.193	-5.3	2.6	38.1
2000-2017	4.2	22.63	16.81	-4.9	2.6	27.4
1970-2017	4.5	24.96	20.34	-4.4	1.5	20.3

Source: WB and IMF 2017,* Real GDP (US$), 1 Percentage of GDP, CAB: Current Account Balance, GDS: Gross Domestic Saving, GDP: Gross Domestic Product, FDI: Foreign Direct Investment, GFCF: Gross Fixed Capital Formation, TR: Total Reserve, - data unavailable.